
IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH

COOPER BACON,

Plaintiff,

v.

PACIFICORP, *doing business as*,
ROCKY MOUNTAIN POWER,

Defendant.

**FINDINGS OF FACT
AND
CONCLUSIONS OF LAW**

Case No. 1:17-cv-4

Howard C. Nielson, Jr.
United States District Judge

Plaintiff Cooper Bacon sues Defendant PacifiCorp, doing business as Rocky Mountain Power, asserting claims for negligence, negligence based on *res ipsa loquitur*, and public nuisance. The court held a bench trial on these claims on June 6–17, 2022, with closing arguments on July 14, 2022.

After carefully considering the evidence and argument presented at trial and in the parties’ pre- and post-trial briefing, the court enters the following findings of fact and conclusions of law. Based on these findings and conclusions, the court will enter judgment for PacifiCorp on all of Mr. Bacon’s claims.

FINDINGS OF FACT

1. PacifiCorp operates the A-36 Ben Lomond-Populos West #1 power line, a 345-kilovolt transmission line that runs from the Ben Lomond substation in North Ogden, Utah, to

the Populos substation near Malad, Idaho. *See* Tr. at 1891:24–1892:11.¹ The line consists of three pairs of transmission wires, arranged vertically with approximately 20 feet between each pair. *See* Ex. 525.

2. Near Willard, Utah, the power line crosses through Willard Bay State Park. *See* Tr. at 413:12–21. The power line runs north to south along the side of Willard Bay Road, the access road to the state park, near the North Marina and Willow Creek campground. *See* Tr. at 413:12–414:14; Ex. 500. This power line is operated pursuant to a contract between the United States of America, the State of Utah, and Utah Power & Light Company—PacifiCorp’s predecessor—that granted the utility company an easement and a right of way for the construction and operation of this transmission line. *See* Ex. 502; Tr. at 413:12–414:14. The contract also provides that PacifiCorp (as Utah Power & Light’s successor-in-interest) will “allow construction of public access roads, recreation facilities and utilities on or across” the easement “that do not interfere with” PacifiCorp’s “construction, operation, or maintenance of its transmission lines.” Ex. 502 ¶ 7(c).

3. At the entrance to the park, the line runs directly over the access road with a clearance of approximately 50 feet between the ground and the lowest pair of transmission wires. *See* Tr. at 1894:15–19; Ex. 525.

4. Beginning in early 2014, Mr. Bacon worked as a heavy tow-truck operator for Stauffer’s Towing. *See* Ex. 68 at 3.

5. On the night of July 7, 2014, Mr. Bacon was dispatched to Willard Bay State Park to assist a disabled motorhome. *See* Ex. 70 at 2. The entrance gate to the park was closed and Mr.

¹ References to the trial transcript are cited as “Tr. at XX:YY.” The trial transcript can be found at Dkt. Nos. 275–284.

Bacon met briefly with Park Ranger Morgan, who opened the gate. *See* Tr. at 56:10–19, 60:5–13. The motorhome was parked inside the entrance gate to the park on the access road and underneath the power line. *See* Ex. 70 at 2; Tr. at 57:15–59:6.

6. After arriving, Mr. Bacon positioned his truck in front of the motorhome and began preparing to tow the motorhome from the front by lifting its front wheels into the air with his truck. *See* Tr. at 746:16–25. Towing the motorhome from the front also required Mr. Bacon to remove the motorhome’s driveline. *See* Ex. 70 at 2.

7. Mr. Bacon then crawled under the motorhome to begin removing the driveline bolts. *See* Tr. at 122:3–7; Ex. 70 at 2. While attempting to remove these bolts, Mr. Bacon experienced several “uncomfortable” electrical shocks. Ex. 70 at 2; *see also* Tr. at 182:3–8. He then stopped what he was doing and disconnected the motorhome battery in an attempt to eliminate the source of the electricity. *See* Tr. at 145:15–18; Ex. 70 at 2.

8. After returning to the driveline bolts, Mr. Bacon continued to receive electrical shocks, exclaiming repeatedly. *See* Tr. at 182:17–24. Eyewitnesses testified that Mr. Bacon then went silent and was unresponsive when they called out to him. *See* Tr. at 122:15–124:6, 146:1–6, 183:8–17. Cody Powell, one of the witnesses, pulled Mr. Bacon out from under the motorhome and helped him sit up. *See* Tr. at 123:17–24, 183:18–184:16. Mr. Bacon appeared “kind of dazed” and “looked like he had been knocked unconscious.” Tr. at 184:11–16.

9. Mr. Bacon was able to stand and indicated that he wanted to speak with the park ranger parked near the entrance gate. *See* Tr. at 146:8–13. But rather than walking toward the ranger, Mr. Bacon began walking into the adjoining field—90 degrees from his intended direction. *See* Tr. at 146:11–21. Mr. Bacon explained to Brandi Beyler, another witness, that he could not see. *See* Tr. at 146:21. Ms. Beyler then helped Mr. Bacon turn and walk in the right

direction. *See* Tr. at 146:22–24. She testified that although he walked under his own power, she helped to steady him. *See* Tr. at 152:25–153:24.

10. Mr. Bacon told Ranger Morgan that he had experienced an electrical shock. *See* Tr. at 61:23–62:3. Ranger Morgan testified that there was a noticeable change in Mr. Bacon’s demeanor from when he had arrived at the park—he was now visibly disoriented, had difficulty speaking, and “couldn’t walk by himself, had trouble getting back by himself to” where Ranger Morgan was parked. Tr. at 61:23–63:8. Ranger Morgan then placed a call to park dispatch at 12:19 AM, explaining that there had been a non-lightning electrocution at the park and that medical attention was required. *See* Tr. at 66:20–67:19; Ex 1 at 1.

11. Paramedics arrived at the scene at 12:37 AM in response to the call. *See* Ex. 62 at 3. The incident report prepared by the paramedics indicates that the call was for a reported electrocution and, upon arrival, the “chief complaint” was “[l]oss of consciousness” with a secondary complaint of pain. Ex. 2 at 2. According to this report, witnesses described Mr. Bacon as losing consciousness for approximately 45 seconds before briefly waking up and then losing consciousness for another 10 seconds. *See id.*

12. The paramedics found Mr. Bacon sitting on a truck, receiving attention from other first responders—he was “conscious, alert, having head pain, chest pain, and blurred vision” as well as “some nausea and vomiting.” *Id.* Mr. Bacon also reported back and shoulder pain and could not remember the incident. *See id.* Paramedics recorded Mr. Bacon’s blood pressure as 170/118 and his resting heart rate as 100 beats per minute. *See id.* Mr. Bacon scored a perfect 15 out of 15 on the Glasgow Coma Scale, which measures alertness. *See id.* Mr. Bacon also had “speech slurring” and weakness on both sides of his body. *Id.*

13. The paramedics noted four injuries: (1) an abrasion on Mr. Bacon’s right shoulder with slight red discoloration and accompanying pain and tenderness, (2) an abrasion and red mark on the right side of his neck that was tender to touch, (3) pain and tenderness in his chest, and (4) redness in his upper right back that was painful and tender to touch. *See id.* at 3–4. The treating paramedic testified that each “abrasion” would have been more appropriately described as a “raised welt.” Tr. at 222:10–223:12. Mr. Bacon was then taken to Brigham City Hospital. *See Ex. 2 at 2.*

14. The Brigham City Hospital records indicate that Mr. Bacon had been electrocuted, lost consciousness twice, and vomited, and that he had right-side weakness and slurred speech. *See Ex. 4 at 13, 17.* He reported his pain as 8 out of 10 in his head and chest. *See id.* at 13. The treating physician also noted that Mr. Bacon had two “welts”—one on his right shoulder and another on the lower right side of his back, *id.*, but “[n]o burns [were] discovered,” *id.* at 16. Around 2:30 AM, Mr. Bacon was transferred to the University of Utah Hospital by ambulance. *See id.* at 9. Dr. Stephen Morris, the former head of the University of Utah Burn Center, explained that electrical injuries in nearby hospitals are routinely transferred to the Burn Center because of their potentially complicated nature. *See Tr. at 1750:10–25.*

15. In route to the University of Utah, Mr. Bacon reported pain in his head and chest. *See Ex. 2 at 5.* He also had muscle spasms, and the paramedic observed that he was alert and confused. *See id.* His Glasgow Coma Score had fallen to 12 and Mr. Bacon was holding his breath when the muscle spasms occurred. *See id.* Mr. Bacon’s muscle spasms and confusion increased en route. *See id.*

16. At the University of Utah, Mr. Bacon was initially treated in the emergency department. The attending physician recorded that Mr. Bacon presented with “electric shock”

and possible loss of consciousness. *See* Ex. 8 at 16. Mr. Bacon had a severe headache, chest pain, welts on the right side of his neck and the left side of his back, and he was “[v]ery weak on [right] side of body” and could not “hold up [his right] arm or leg.” *Id.* The doctor further noted that he had shortness of breath and speech difficulty, *see id.* at 17, and an “area of raised erythema approx 2 cm in diameter on right neck and right lower abdomen,” that could have been “possible contact points,” but “[n]o real burns,” *see id.* at 16, 18. Finally, the attending doctor concluded that Mr. Bacon “require[d] admission to burn ICU.” *Id.* at 22.

17. At the Burn Unit, Mr. Bacon presented “with less than 1% [total body surface area] electrical burn to the right neck and lesion to the right groin.” *Id.* at 24. He had a headache, intermittent confusion, and “tenderness around the right neck and right clavicle as well as the right groin and right lower quadrant of the abdomen.” *Id.* at 24–25.

18. Mr. Bacon was also seen by Ophthalmology and Neurology. The ophthalmologist recorded that Mr. Bacon had “bilateral blurry vision right after the shock for a few hours, but his vision has returned to normal.” *Id.* at 14. Mr. Bacon did not report eye pain, floaters, flashes, or scotomas. *See id.* Mr. Bacon’s “visual acuity [was] 20/20 OU and his eye exam [was] completely normal.” *Id.* at 16. The ophthalmologist explained that “[p]atients can develop cataracts after electrical shock, however this is not an emergency and if they are significant enough to require surgery or monitoring, they would be significant enough to affect subjective vision.” *Id.* Finally, she observed that Mr. Bacon was lethargic and fell “asleep every few seconds during the exam.” *Id.* at 15.

19. The neurologist recorded that Mr. Bacon presented with electric shock and upper and lower extremity weakness on the right side of his body. *See id.* at 4. She further observed that Mr. Bacon had “normal strength (although pain limited and fluctuating) and subjective

sensory deficits.” *Id.* There was “no concern for central process given peripheral exam findings,” and Mr. Bacon’s strength was largely within normal limits, “though effort dependent and somewhat limited by pain.” *Id.*

20. The neurologist also explained that “low voltage electrical burns can lead to peripheral neuropathy” which was the “most likely cause of weakness/sensory disturbance” with a “possible component of malingering/conversion disorder” given Mr. Bacon’s “recent stressors” and his “psychiatric history” of “depression/anxiety [and a] previous suicide attempt” as reported by his mother. *Id.* Mr. Bacon’s EEG also came back normal. *See id.* at 179.² The neurologist recommended that Mr. Bacon receive therapy for his right extremities and a psychiatric outpatient follow-up given his psychiatric history and possible conversion. *See id.* at 5. Finally, she advised Mr. Bacon to contact Neurology regarding an outpatient appointment and EMG if his strength and sensory disturbances did not resolve in two weeks. *See id.*

21. Mr. Bacon was discharged from the University of Utah on July 10th. *See id.* at 208. At the time of discharge, the attending physician reported that Mr. Bacon had shown continued improvement, “developed muscle strength 5/5 which seemed to be more determined by effort,” but still had a “slight speech impediment.” *Id.* at 179–80.

22. On July 21st, Mr. Bacon received a voice evaluation. *See Ex. 25* at 2. Mr. Bacon “exhibit[ed] speech/voice characteristics which [were] very unique” and the speech language pathologist opined that Mr. Bacon “would benefit greatly from a voice stroke evaluation.” *Id.*

² The neurologist initially expressed concern regarding “rhythmic, jerking activity” involving Mr. Bacon’s face and neck and his “somnolence” despite not receiving any “analgesics or sedation since arrival.” *Ex. 14* at 5. She requested an EEG to determine whether Mr. Bacon was having “epileptiform activity that correlate[d] with twitching movements within face.” *Id.* After the EEG returned normal results, *see Ex. 16* at 1, the neurologist did not discuss the twitching in her second evaluation.

23. Mr. Bacon then had a follow-up visit on July 31st. *See id.* at 3. The speech language pathologist noted that “immediately following the accident,” Mr. Bacon “was unable to get a full sentence out” but “he ha[d] improved slightly.” *Id.* at 4. He continued “to have slowed, labored speech with stutter-like quality” that is worse first thing in the morning or after naps. *Id.* Further, Mr. Bacon reported pain in his left and right sides, vocal fatigue, and “trouble processing words and some mild word finding problems.” *Id.* And while Mr. Bacon’s walking had improved, he had trouble with stairs and could only stand for 15 minutes. *See id.* Mr. Bacon also explained that “the shock [had] fried everything in [his] shoulder and [his] chest.” *Id.*

24. Mr. Bacon’s voice quality was “severely dysphonic characterized by tremulous quality with phonatory breaks” and he was “less than 50% intelligible.” *Id.* Mr. Bacon was diagnosed with dysphonia and advised to attend speech and voice therapy once a week for 8–10 weeks. *See id.* at 5.

25. Mr. Bacon had several follow up visits over the next two months. Mr. Bacon initially reported progress with his speech, *see id.* at 13, but subsequently denied further improvement, *see id.* at 16, 18. The speech language pathologist noted that Mr. Bacon was “non-compliant with therapy and [had] reached a plateau.” *Id.* at 21. At his September 26th appointment, his voicing was “much improved . . . with therapy.” *Id.* at 22.

26. In September, Mr. Bacon had an electromyography study. The results were normal for his right upper extremity and there was no “evidence to suggest a right cervical radiculopathy, shoulder girdle entrapment neuropathy, brachial plexopathy, median or ulnar neuropathy, or generalized sensorimotor peripheral neuropathy to account for [his] symptoms” Ex. 29 at 31.

27. Mr. Bacon also received physical therapy throughout the fall of 2014 to address his right-side weakness and shoulder issues. *See* Ex. 27; Ex. 29. He had an MRI on his right shoulder on August 18, 2014, that did not indicate any abnormalities. *See* Ex. 31 at 1. And by October, Mr. Bacon reported reaching “a plateau with physical therapy” and described intermittent episodes of chest pain and increased shoulder girdle pain. Ex. 29 at 35.

28. Mr. Bacon was seen by Dr. Thomas Watson in October for this right shoulder pain. *See* Ex. 36 at 4–5. He described his shoulder pain as 7 out of 10 and also noted loss of bladder control at night. *See id.* Mr. Bacon was cleared for shoulder surgery in December, *see id.* at 7, and Dr. Watson performed an “[a]nterior and posterior labral repair with subacromial decompression” on Mr. Bacon’s right shoulder on January 15, 2015, Ex. 37 at 4.

29. Around this time, Mr. Bacon also reported “seizure-like activity” and “palpitations.” Ex. 34 at 1. He received an EEG, EKG, and echocardiogram that did not result in abnormal findings. *See* Ex. 29 at 41; Ex. 32; Ex. 34 at 26. Mr. Bacon was assessed as having “possible seizure[s],” or “syncopal episode . . . post electrocution.” Ex. 34 at 30. Numerous individuals have observed these seizures and Mr. Bacon currently takes Keppra for his condition. *See* Tr. at 321:18–25, 465:6–8, 467:1–3, 583:18–584:20, 807:4–5.

30. Mr. Bacon returned to Stauffer’s Towing in August 2014. *See* Tr. at 907:20–908:13. He helped around the shop and worked in the dispatch office but was unable to resume his previous towing duties. *See* Tr. at 795:10–797:15. He was subsequently prohibited from further employment at Stauffer’s Towing because he was abusing controlled substances. *See* Tr. at 582:12–583:17. Mr. Bacon then worked for Cache Valley Transport for approximately a year as a long-haul truck driver before continuing that work for Francis Trucking and then Dirt Hogs. *See* Tr. at 797:22–798:23. Afterwards, he worked for JP Trucking and then Jaeschke Trucking.

See Tr. at 799:6–800:15. Although Mr. Bacon worked as a long-haul truck driver for these companies, it appears that he has not had a valid commercial driver’s license since the incident at Willard Bay State Park. *See* Tr. at 1884:9–14. Mr. Bacon subsequently left Jaeschke Trucking and has worked for Morgan Pavement since then. *See* Tr. at 800:7–25. Mr. Bacon testified that his medical conditions prevented him from continuing to work as a long-haul truck driver. *See* Tr. at 800:10–13, 20–23.

31. In August 2015, Mr. Bacon was admitted to the emergency department at McKay-Dee Hospital Center with “suicidal thoughts in the context of PTSD symptoms including anxiety, severe insomnia, and depression.” Ex. 42 at 12. He was discharged two days later after participating in group therapy and receiving several prescriptions. *See id.* at 6–8, 12. He was described as “psychiatrically and medically” stable at the time of discharge. *Id.* at 12. He was admitted again in May 2017 with major depression and suicidal ideation and discharged the following day. *See* Ex. 44 at 26.

32. On August 24, 2017, Mr. Bacon was admitted to the emergency department for “increased seizure activity.” Ex. 50 at 1. While at the hospital, Mr. Bacon experience several seizure events, but medical staff was unable to capture any of the events on an EEG, which otherwise returned normal results. *See* Ex. 51 at 1–2. Mr. Bacon was diagnosed with a “[c]lonic seizure disorder” upon discharge two days later. *Id.* at 1. His differential diagnosis included “non-epileptic spells, though [doctors] ha[d] not been able to confirm this by EEG.” Ex. 53 at 2–3. His doctors advised that they would “continue to treat [his condition] as seizures until diagnosis [could] be confirmed.” *Id.* at 3.

33. In September 2017, Mr. Bacon underwent a three day “ambulatory EEG.” Ex. 66 at 2. During this period, “[n]one of the patient’s typical events were recorded.” *Id.* There were

over 140 “push-button events without explanation” that were “presumed accidental” and one “[p]ushbutton for chest and heart pain” that did not register an EEG change. *Id.* at 2–3. The results of the test were normal but “inconclusive” because none of his “typical convulsive events were captured.” *Id.* at 3.

34. Mr. Bacon received another complete eye exam in December 2017. *See* Ex. 49. The examination revealed “some early cataract change in the cortical layers of his lens, but the cause of this [could not] be determined from [the] exam.” *Id.*

35. In early 2018, Mr. Bacon reported pain and instability again in his right shoulder. *See* Ex. 74 at 16–17. The doctor advised strengthening therapy and anti-inflammatory medication. *See id.* at 17.

36. On March 19, 2018, Mr. Bacon was admitted to Shadow Mountain Recovery in Taos, New Mexico for residential substance abuse treatment. *See* Ex. 73; Ex. 75 at 871. Upon admission, he was diagnosed with “Cocaine use disorder, severe,” “Opioid use disorder, Severe,” “Generalized anxiety disorder,” “Post-traumatic stress disorder, chronic,” “Unspecified obsessive-compulsive and related disorder,” “Attention-deficit/hyperactivity disorder, Combined presentation,” and “Mild neurocognitive disorder due to traumatic brain injury.” Ex. 75 at 871. He was subsequently discharged on May 24th, having “demonstrated satisfactory progress toward the completion of all of his treatment goals.” *Id.*

37. On July 17, 2018, Mr. Bacon was again admitted to the emergency room with seizures. *See* Ex. 89 at 2. He had an episode upon arrival, but afterwards his test results returned normal and he did not exhibit further seizure activity. *See id.* Mr. Bacon was discharged the following day. *See id.*

38. On November 16, 2019, Mr. Bacon was admitted to the emergency room “with abrupt onset low back pain with numbness radiating to the bilateral lower legs.” Ex. 98 at 8. He reported that he had “chronic low back pain after being electrocuted many years ago.” *Id.* His MRI was “unremarkable,” and he was discharged the same day after receiving Tylenol and Valium. *Id.*

39. At trial, the parties presented extensive testimony relating to the operation of the power line and the physical mechanics behind the electrical shock that may have caused Mr. Bacon’s injuries. None of the expert or fact witnesses in this case had ever seen or heard of an incident involving overhead power lines that resulted in significant injury or anything comparable to the continuing symptoms reported by Mr. Bacon absent direct contact through a conductor with the power line. *See* Tr. at 1098:6–17 (Testimony of Dr. Charles Lawton); Tr. at 1222:2–1223:2 (Testimony of Dr. John Palmer); Tr. at 1429:5–1430:8 (Testimony of Dr. Athanasio Meliopoulos); Tr. at 1932:10–1933:2 (Testimony of Jake Barker). Mr. Bacon’s counsel conceded—and the court agrees—that “within the universe of the witnesses that testified in this case,” no one had seen or heard of any incident like Mr. Bacon’s. Dkt. No. 291 at 1:36:02–11 (recording of closing argument).

40. On the night of July 7, 2014, the power line was operating at an average voltage of approximately 360 kV. *See* Tr. at 1896:4–7; Ex. 505. Jake Barker, a PacifiCorp transmission engineer, explained that “the lines are nominally 345 kV rated,” but are operated on a voltage schedule “which can range anywhere from . . . 97 percent up to . . . almost 110 percent” of the nominal value. Tr. at 1889:1–23, 1896:8–16. Dr. John Palmer, Plaintiff’s electrical engineering expert, testified that “[a]s a general rule of thumb, most utilities try to operate within 5 percent of the nominal value, plus or minus 5 percent.” Tr. at 1197:9–12. Dr. Palmer, Dr. Athanasio

Meliopoulos (Defendant's electrical engineering expert), and Mr. Barker all testified that utilities operate their power lines within ranges of the nominal value to accommodate changes in power generation or different customer load requirements. *See* Tr. at 1197:9–21, 1282:11–1283:23, 1917:4–14. Dr. Meliopoulos further explained that the range within which a power line operates can depend on the type of customer primarily served by the line. *See* Tr. at 1282:16–20. Mr. Barker also testified that it was not a violation of any industry standard to operate between 97 percent to 110 percent of nominal value, and that the construction of the line could handle voltages well above 110 percent of the nominal value. *See* Tr. at 1897:3–9, 1917:23–1918:2.

41. When asked what PacifiCorp “considers to be the maximum tolerance in their power lines,” Dr. Palmer responded that his recollection was “that their maximum voltage for that line was 365 kV,” but he qualified this by clarifying that he was “talking from memory.” Tr. at 1198:13–17. PacifiCorp represented in its discovery responses that the maximum operating voltage for this line was 365.7 kV and that the actual maximum voltage on the night of Mr. Bacon's accident was 364.7 kV. *See* Ex. 700 at 5, 9. Dr. Palmer agreed. *See* Tr. at 1120:1–4. And while Mr. Barker also testified that there “was maybe a 2 to 3 percent fluctuation” from the average reported voltage, *see* Tr. at 1919:2–9, PacifiCorp's discovery response states that in addition to the maximum voltage data provided, it separately provided “hourly average data” from July 5th to July 17th, Ex. 700 at 10. The court finds that Mr. Barker's testimony is insufficient to establish that the voltage in the line ever exceeded 364.7 kV while Mr. Bacon was working under the motorhome.

42. The National Electric Safety Code, developed and produced by the Institute of Electrical and Electronics Engineers, prescribes various requirements for the operation of high voltage power lines. *See* Tr. 1185:7–11. This code has been widely adopted as law by state

regulatory agencies, and utilities within the vast majority of the country adhere to it. *See* Tr. at 1185:24–1186:4. Most relevant here, Section 232(c)(1) of the Code states that

For voltages exceeding 98 kilovolts AC to ground, either the clearances shall be increased or the electric field or the effects thereof shall be reduced by other means as required to limit the steady state current due to electrostatic effects to 5 milliamps rms if the largest anticipated truck, vehicle, or equipment under the line were short-circuited to ground.

Tr. 1175:25–1176:6, 1280:23–1281:4.

43. Dr. Meliopoulos explained how an electrostatically induced current is generated. He explained that any two conductors—materials that can carry electricity—can function as a capacitor. *See* Tr. at 1253:18–25. At the time of the incident, the power line and the motorhome functioned as a capacitor. *See* Tr. at 1253:18–1254:2, 1255:23–25, 1258:23–1260:7. A capacitor is characterized by its capacitance—the amount of energy “in the electric field that is between” the two conductors. *See* Tr. at 1254:3–6. This electric field is “the spacial voltage variation” or “the difference of [two] voltages divided by the distance between the two points.” Tr. 1254:23–1255:3. Here, that is the difference in the voltage in the power line and the voltage of the motorhome.

44. Dr. Meliopoulos further explained that there was a second capacitor in this case, created by the ground and the motorhome (which was insulated by its tires from the ground). *See* Tr. at 1255:12–22. This means that there is a separate capacitance value reflecting the energy field between the motorhome and the ground. *See* Tr. at 1255:23–25. Each capacitor also has a corresponding impedance—or resistance to the passage of electric current—that is derived from its capacitance. *See* Tr. at 1261:7–21.

45. Using these impedance values and the voltage originating from the power line, Dr. Meliopoulos calculated the induced current using Ohm’s law. *See* Tr. at 1261:18–1262:17.

He calculated the impedance of the capacitor comprising the power line and the motorhome to be approximately 320 million ohms and the impedance of the motorhome-soil capacitor to be about 1.5 million ohms. *See* Ex. 806. Using a voltage equal to the root mean square of 360kV—the average operating voltage on the night of the incident—Dr. Meliopoulos calculated a displacement current of 0.76 mA. *See* Tr. at 1270:14–17, 1896:4–7.³ This value is largely consistent with the original value calculated by Dr. Palmer—0.9mA—and Dr. Meliopoulos explained that the small discrepancy between the calculations was caused by Dr. Palmer’s failure to account for the effect of the alternating current in the other two pairs of transmission wires. *See* Tr. at 1267:25–1268:6.

46. Dr. Meliopoulos’s calculation was also consistent with internal modeling performed by PacifiCorp in connection with Plaintiff’s discovery requests. PacifiCorp calculated the electrostatic current 12 feet from the ground for a tractor-trailer measuring 51.7 feet in total length including a trailer 40 feet long, 8 feet wide, and 12.2 feet tall, using “the height of the line” and “the voltage of the line at the time.” Tr. at 1900:3–8; *see also* Ex. 701 at 2. PacifiCorp used two different software programs that each calculated induced current of less than 5 mA. *See* Ex. 701 at 2. Mr. Barker testified that PacifiCorp calculated a value of 1.9 mA—similar to Dr. Meliopoulos calculation for the induced current if two motorhomes were electrically connected. *See* Tr. 1285:5–10, 1901:1–2.⁴

³ Dr. Meliopoulos and Dr. Palmer both explained that because the three pairs of transmission wires constituting the power line operate in phase with each other, the effective voltage is calculated by dividing 360 kV by the square root of three. *See* Tr. at 1102:18–20, 1268:20–23.

⁴ The capacitance between any two objects depends upon both the distance between those objects and their surface area. *See* Ex. 699. Since induced current is derived from impedance and impedance is derived from capacitance, an increase in surface area or a decrease in distance ultimately increases the induced current. *See id.* Here, the dimensions of the tractor-trailer used

47. In addition to computer modeling, PacifiCorp also conducted physical testing using a line truck parked under the power line to simulate the motorhome. *See* Tr. at 1927:10–1929:6. Kevin Valcarce, a Willard Bay State Park employee, testified that he observed these tests. *See* Tr. at 103:9–11, 106:11–107:14. Mr. Valcarce further testified that he asked the PacifiCorp representative conducting the test “if it was possible if this could happen” and the representative “went over with his meter and checked the truck, read a reading off of that” and stated, ““Yes, it was possible it could happen.”” Tr. at 107:9–14. Mr. Valcarce testified that he understood this to mean that “the man on the tow truck, when he got electrocuted, it could happen again.” Tr. at 107:15–18. But Mr. Valcarce also conceded that he was not aware what the reading from the meter was and that the PacifiCorp representative was referring to current coming from the vehicle parked under the power line when he said “this could happen.” Tr. at 111:4–22. Nor could Mr. Valcarce recall whether the PacifiCorp representative described the reading as “high.” Tr. at 113:5–14. PacifiCorp ultimately refused to disclose the test results on the ground that they were privileged, *see* Ex. 700 at 14, and Mr. Bacon’s counsel did not move to compel production. His counsel explained at closing arguments that they made a strategic decision to rely on Mr. Valcarce’s testimony instead. The court finds, however, that Mr. Valcarce’s testimony established only that PacifiCorp conducted testing and observed an induced current. The testimony does not establish what that current was or whether it was higher than 5 mA.

48. Despite initially calculating a value similar to Dr. Meliopoulos, Dr. Palmer subsequently revised his calculation to 3–4 mA after making certain assumptions regarding the

in PacifiCorp’s modeling were considerably larger than the motorhome, resulting in a higher calculated induced current. *Compare id. with* Ex. 701 at 2.

motorhome's tires. *See* Tr. at 1109:21–25. Dr. Palmer later revised his calculations again based on the accounts of Brandt Barker and Tony Thurber who both reported receiving electrical shocks at Willard Bay—though at different times from Mr. Bacon. *See* Tr. at 1112:4–13, 1113:10–18. Specifically, Dr. Palmer relied on Mr. Barker's testimony that the shock caused his muscles to contract to conclude that the current must have exceeded the “let-go current” threshold of 6 mA—a phenomenon documented in scientific literature—and was actually between 6 and 22 mA. *See* Tr. at 1112:14–20, 1113:5–9; 1138:14–22, 1160:18–19.

49. The court rejects Dr. Palmer's conclusions for several reasons.

50. First, Dr. Palmer explained that his calculations jumped from 0.9 mA to 3–4 mA when he considered the effect of the motorhome's tires. *See* Tr. at 1208:3–11. But in doing these calculations, Dr. Palmer assumed that these tires were radial belted and that the radial belt within the tire was in direct contact with the tire rim, which had the effect of increasing the calculated current. *See* Tr. at 1208:8–18, 1214:2–11. Dr. Palmer conceded, however, that he did not know whether the motorhome's tires were steel belted or, if they were, whether the steel belt was in direct contact with the metal rim. *See* Tr. at 1212:1–4. Because Plaintiff has not produced any other evidence to support these assumptions, the court cannot credit calculations based on these highly speculative assumptions.⁵

51. Second, even with these speculative assumptions regarding the motorhome's tires, Dr. Palmer calculated an induced current of only 3–4 mA. Dr. Palmer's conclusion that the induced current actually was between 6–22 mA—over the “let go” threshold—was not based on any calculations. Rather, it was based solely on the accounts of Mr. Thurber and Mr. Barker. *See*

⁵ Not only are Dr. Palmer's assumptions speculative, they seem quite dubious. In particular, it is difficult to understand how the tires could be airtight if their connection to the rim was metallic rather than rubber.

Tr. at 1112:4–13, 1113:10–18. Mr. Thurber testified that while camping under the power line at Willard Bay in May of 2005 or 2006, he grabbed the aluminum ladder attached to his camper and felt an electrical shock. *See* Ex. 356 at 12:13–13:20, 16:19–24, 28:14–21. But Mr. Thurber further testified—repeatedly—that he “[i]mmediately let go.” *Id.* at 29:7–30:21. He testified that he did not have trouble opening his hand and pulling his arm away, that the shock did not limit his ability to open his hand or move his arm, and that it did not affect any other muscles in his body. *See id.* at 30:22–31:11. Mr. Thurber also testified that he did not report this incident to PacifiCorp. *See id.* at 35:4–36:14. The court finds that Mr. Thurber’s testimony does not support Dr. Palmer’s conclusion.

52. Mr. Barker testified that in September 2018, he was shocked while exiting his motorhome that was parked under the power line at Willard Bay. *See* Tr. at 339:11–12, 341:17–25, 348:2–5. Specifically, Mr. Barker stated he had one foot on the ground and his ring finger touched the screen doorframe, and he felt a shock and remembered feeling his body “like clench up.” Tr. at 348:11–16. He testified that he then fell “backwards on the ground.” Tr. at 350:25–351:1. Leaving aside the obvious inherent difficulty of trying to draw technical conclusions regarding the amount of current involved in this incident based on the subjective testimony of one individual, the court finds that there were multiple inconsistencies between Mr. Barker’s trial testimony and his earlier deposition testimony that make such an undertaking especially problematic here. On cross examination at trial, Mr. Barker testified that he “grabbed the door,” Tr. at 367:5–6, but during his deposition he stated that he did not grab the door and that it “would be false” to so state because he “never grabbed the door,” Tr. at 369:4–15. Mr. Barker also testified at trial that the shock was “very painful.” Tr. at 370:9–10. During his deposition, however, Mr. Barker stated that it was not painful and that he did not remember feeling any pain.

See Tr. at 370:14–25. Given Mr. Barker’s inconsistent accounts of this incident, the court finds his testimony insufficient to support Dr. Palmer’s conclusion that the induced current was between 6–22 mA.

53. Finally, and most fundamentally, Dr. Meliopoulos explained that Dr. Palmer’s conclusions cannot be reconciled with a straightforward application of Ohm’s law. *See* Tr. at 1422:8–13. Induced current is calculated by dividing the voltage in the power line by the sum of the impedance between the power line and the motorhome and the impedance between the motorhome and the ground. *See* Ex. 807. Here, Dr. Meliopoulos testified that the impedance between the power line and the motorhome was 320 million ohms—a number that Dr. Palmer conceded would not change because it was dictated by geometry and the physical distance between the objects. *See* Tr. 1421:5–1422:3. Dr. Meliopoulos thus explained that even if the impedance between the motorhome and the ground was zero (as if the motorhome were grounded), the voltage in the power line would need to be approximately 1 million volts to create an induced current of even 3 mA. *See* Tr. at 1421:3–1422:13. The court finds Dr. Meliopoulos’s testimony and calculations significantly more credible and persuasive than Dr. Palmer’s testimony and analysis based on speculative assumptions regarding the motorhome’s tires and the subjective and inconsistent testimony of Mr. Barker. The court thus finds, based on all of the evidence, that the induced current experienced by Mr. Bacon did not exceed the 5-mA limit imposed by the National Electric Safety Code.

54. Dr. Meliopoulos further testified that the power line did not violate any other “regulatory or industry standard.” Tr. at 1299:19–22. Likewise, Dr. Palmer’s initial opinion “did not conclude that there was a violation of the National Electric Safety Code” or “any violation of any professional standard applicable to transmission engineering.” Tr. at 1123:5–11.

CONCLUSIONS OF LAW

The parties agree that Mr. Bacon’s claims are governed by Utah law. The court addresses in turn Mr. Bacon’s claims of negligence, negligence based on *res ipsa loquitur*, and public nuisance.

I.

To prevail on a claim of negligence, the plaintiff must establish that “(1) that the defendant owed the plaintiff a duty, (2) that the defendant breached that duty, (3) that the breach of duty was the proximate cause of the plaintiff’s injury, and (4) that the plaintiff in fact suffered injuries or damages.” *Hunsaker v. State*, 870 P.2d 893, 897 (Utah 1993).

The parties sharply dispute the extent of Mr. Bacon’s symptoms, whether those symptoms are genuine or the result of malingering or conversion, and whether they were caused by electrical shock or by some other event or events in Mr. Bacon’s life. The court ultimately need not decide these questions, however, because it concludes that Mr. Bacon failed to prove that PacifiCorp breached its duty or that it proximately caused his injuries.

A.

As the operator of a high voltage transmission line, PacifiCorp owes a “high degree of duty” to any “person rightfully in proximity” to the power line. *Brigham v. Moon Lake Elec. Ass’n*, 470 P.2d 393, 395 (Utah 1970). But this does not amount to strict liability—PacifiCorp is not required to insure the general public against any sort of injury that might result from the power line. *See id.* Instead, PacifiCorp must exercise “reasonable care in view of the great potential danger involved.” *Id.* The amount of care required thus “varies with the risk of harm which is known or under the circumstances ought to be known to exist.” *Id.* (footnote omitted). Mr. Bacon bears the burden of establishing the standard of care, and because the standard here

involves issues “outside the knowledge and experience of lay persons,” Mr. Bacon must present expert testimony to carry this burden. *Jenkins v. Jordan Valley Water Conservancy Dist.*, 321 P.3d 1049, 1051–52 (Utah 2013).

In their testimony, both Dr. Palmer and Dr. Meliopoulos referenced the National Electric Safety Code, testifying that if the power line generated an induced current of more than 5 mA, then PacifiCorp would have violated this Code. *See* Findings of Fact 42. Utah has explicitly adopted the National Electrical Safety Code as the minimum requirements for “the operation of electrical equipment and lines,” Utah Admin. Code R746-310-4(D)(4), and the Code reflects industry standards, *see* Findings of Fact 42. The Utah Supreme Court has made clear that a court can look to regulations as “evidence of industry standards” to determine “the appropriate standard of conduct.” *Slisze v. Stanley-Bostitch*, 979 P.2d 317, 321 (Utah 1999). Absent any other expert testimony from which the court could infer the relevant standard of care, the court concludes that this Code establishes the applicable standard of care for an induced current under these circumstances.

Because Mr. Bacon failed to establish that the induced current under the power line exceeded 5 mA, *see* Findings of Fact 53, the court concludes that PacifiCorp did not breach its duty of care in this regard. And there is no evidence that PacifiCorp breached any other provision of the National Electric Safety Code. *See* Findings of Fact 54.⁶

Mr. Bacon further argues that PacifiCorp breached its duty by operating the power line above its 345 kV nominal value. Dr. Palmer testified that most utilities companies operate their

⁶ To the extent that Mr. Bacon argues that the National Electric Safety Code does not impose an adequate standard of care and that the standard of care should be something else, the court finds that he has failed to carry his burden of presenting expert testimony establishing a different standard of care.

transmission lines at voltages within 5 percent of the nominal value, which here would limit the maximum voltage to 362.25 kV. *See* Findings of Fact 40. The evidence establishes that the maximum voltage in this line during the period when the incident occurred was slightly higher—364.7 kV. *See* Findings of Fact 41. The court finds this evidence insufficient to establish a breach of the standard of care for two reasons.

First, Dr. Palmer, Dr. Meliopoulos, and Mr. Barker all testified that utilities operate their power lines at voltages within a range of the nominal value to account for various inputs and outputs effecting the electrical system as a whole, such as changes in power generation or customer load requirements. *See* Findings of Fact 40. Dr. Meliopoulos explained that utilities can tailor this range to meet the specific operating requirements of their customers. *See id.* Mr. Barker testified that PacifiCorp’s stated operating range of 97–110 percent of nominal voltage was designed to accommodate the requirements of its customers but, structurally, the power line could handle much higher voltages without malfunctioning. *See id.* It follows that the supposed industry norm is not related to mechanical limitations of the power lines themselves, but rather to system-wide customer needs.

Second, Mr. Barker offered unrefuted testimony that it was not a violation of the National Electric Safety Code or any other regulation or industry standard to operate a power line at voltages between 97–110 percent of the nominal value. *See* Findings of Fact 40. This is consistent with Dr. Palmer’s testimony that he did not find any violations of the National Electric Safety Code or any other professional standard applicable to transmission engineering in his initial assessment, despite being aware that the maximum voltage in the line at the time of the incident was 364.7 kV. *See* Findings of Fact 54.

For all of these reasons, the court finds that Mr. Bacon failed to establish that PacifiCorp breached its duty of care.

B.

The court further finds that Mr. Bacon failed to establish that PacifiCorp proximately caused his injuries. To establish proximate causation under Utah law, a plaintiff must prove two elements. First, the plaintiff must demonstrate a “cause which, in a natural and continuous sequence, unbroken by any new cause, produced the injury, and without which the injury would not have occurred.” *Bunker v. Union Pac. R. Co.*, 114 P. 764, 775 (Utah 1911). Second, because “foreseeability is an element of proximate cause,” *Steffensen v. Smith’s Mgmt. Corp.*, 862 P.2d 1342, 1346 (Utah 1993), the plaintiff must prove that “under the particular circumstances [the defendant] should have foreseen that his conduct would have exposed others to an unreasonable risk of harm,” *Watters v. Query*, 588 P.2d 702, 704 (Utah 1978). The plaintiff must demonstrate the “foreseeability of the specific mechanism of injury.” *B.R. ex rel. Jeffs v. West*, 275 P.3d 228, 235 (Utah 2012). Although the plaintiff need not demonstrate that the defendant should have foreseen “that the particular accident would occur,” he or she still must demonstrate that the defendant should have foreseen “a likelihood of an occurrence of the same general nature.” *Rees v. Albertson’s, Inc.*, 587 P.2d 130, 133 (Utah 1978).

Here, none of the calculations or modeling performed by PacifiCorp or the parties’ experts predicted a current near 5 mA—let alone in excess of that amount. *See Findings of Fact* 45–46, 48. Mr. Bacon’s sole evidence that PacifiCorp should have foreseen a current of this magnitude is (1) the testing that PacifiCorp conducted after the incident that supposedly revealed results consistent with Mr. Bacon’s theory of the case, and (2) the experiences of two individuals, which Dr. Palmer testified indicated a current in excess of 5 mA.

But as explained, Mr. Valcarce's testimony is insufficient to establish what the results of those tests were. *See* Finding of Fact 47. In all events, PacifiCorp did not conduct the testing until *after* Mr. Bacon's incident and the test results (whatever they were) thus could not have given PacifiCorp any basis to foresee Mr. Bacon's incident *before* it happened. *See id.* As discussed, Mr. Barker's testimony at trial was inconsistent with his deposition testimony and thus cannot support a finding that the current exceeded 5 mA. *See* Finding of Fact 52. Mr. Barker's experience also happened more than four years after Mr. Bacon's accident and thus could not have given PacifiCorp any basis to foresee that accident. *See* Findings of Fact 52. Finally, Mr. Thurber's testimony does not support any inference that he experienced a current in excess of 5 mA. *See* Finding of Fact 51. And although Mr. Thurber's incident did occur prior to Mr. Bacon's, Mr. Thurber testified that he did not report this incident to PacifiCorp and there is no evidence that PacifiCorp was aware of it prior to Mr. Bacon's accident. *See* Findings of Fact 51. Mr. Thurber's experience thus could not have given PacifiCorp any basis to foresee what happened to Mr. Bacon.

Moreover, as Mr. Bacon's counsel correctly conceded, "within the universe of witnesses that testified in this case," no one had seen or heard of any instance of induced current from a power line resulting in injuries anything like those reported by Mr. Bacon. *See* Findings of Fact 39. The court concludes that this precludes a finding of proximate cause.

For all of these reasons, the court will grant judgment in favor of PacifiCorp on Mr. Bacon's claim for negligence.

II.

Mr. Bacon argues that even if he cannot establish the elements of negligence, the court should still infer negligence under the doctrine of *res ipsa loquitur*. This doctrine is "an

evidentiary rule that allows an inference of negligence to be drawn when human experience provides a reasonable basis for concluding that an injury probably would not have happened if due care had been exercised.” *King v. Searle Pharms., Inc.*, 832 P.2d 858, 861 (Utah 1992) (cleaned up). But for this rule to apply, the plaintiff “must have presented evidence that the occurrence of the incident is more probably than not caused by negligence.” *Ballow v. Monroe*, 699 P.2d 719, 722 (Utah 1985) (quotation omitted). At that point, *res ipsa loquitur* “establishes a rebuttable inference of negligence” and places the burden on the defendant to disprove negligence. *Dalley v. Utah Valley Reg’l Med. Ctr.*, 791 P.2d 193, 200 (Utah 1990). But since *res ipsa loquitur* “raises only an inference and not a presumption of negligence, the fact finder may choose to either accept or reject that inference.” *King*, 832 P.3d at 861.

The court rejects the inference of negligence here. First, the court concludes that Mr. Bacon has not shown that this incident was more likely than not caused by negligence. He has not identified any mechanism by which Pacific Corp’s breach of a duty of care could have caused his injuries—straightforward application of Ohm’s law demonstrates that the voltage in the power line would have to have been more than three times higher than the evidence established that it was to induce a current in excess of 5 mA. *See Findings of Fact 53*. Despite having access to PacifiCorp’s voltage data and the power line geometry, Mr. Bacon is unable to offer any plausible explanation of how the power line could have induced current in excess of the standard established by the National Electric Safety Code. His sole evidence on this point consists of (1) Dr. Palmer’s testimony which rests on dubious and speculative assumptions, anecdotal accounts, and suspect mathematics, and (2) Mr. Valcarce’s testimony relating to the test PacifiCorp conducted at the scene. *See Findings of Fact 47, 49–53*. For the reasons already

addressed, the court finds that neither of these witnesses' testimony suffices to establish that Mr. Bacon experienced a shock from induced current in excess of 5 mA. *See* Findings of Fact 50–53.

Second, PacifiCorp has thoroughly rebutted any inference of negligence. PacifiCorp's internal modeling, Dr. Meliopoulos's testimony, and Dr. Palmer's initial calculations all determined that the induced current was well below the 5-mA threshold. *See* Findings of Fact 45–46. And PacifiCorp has put forth evidence demonstrating that all other aspects of the power line complied with industry and professional standards. *See* Findings of Fact 54.

Third, Mr. Bacon has not presented or identified any evidence that would support a conclusion that PacifiCorp should have foreseen that induced current from its power line could have inflicted serious injury. The court finds that the evidently unforeseeable nature of Mr. Bacon's experience not only weighs strongly against any inference of negligence but also forecloses any inference of proximate causation (assuming the doctrine of *res ipsa loquitur* could justify such an inference).

The court will thus grant judgment in favor of PacifiCorp on Mr. Bacon's claim for negligence based on *res ipsa loquitur*.

III.

Finally, the court considers Mr. Bacon's public nuisance claim. Utah Code § 76-10-803 defines a public nuisance as “unlawfully doing any act or omitting to perform any duty” in a manner that, among other things, “annoys, injures, or endangers the comfort, repose, health, or safety of three or more persons.”

To prevail on a claim for public nuisance, the plaintiff must establish: (1) the alleged nuisance consisted of unlawfully doing any act or omitting to perform any duty; (2) the act or omission in any way rendered three or more persons insecure in life or the use of property; (3)

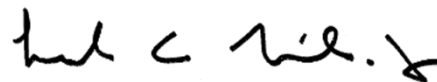
the plaintiff suffered damages different from those of society at large; (4) the defendant caused or is responsible for the nuisance complained of; and (5) the defendant's conduct was unreasonable. *See Whaley v. Park City Mun. Corp.*, 190 P.3d 1, 6 (Utah Ct. App. 2008). But a plaintiff "cannot prevail on a public nuisance claim on the theory that [the Defendant] acted unlawfully and harmed the community at large when, in fact, [the Defendant] merely acted in a manner that was explicitly authorized" by law. *Id.* at 7.

Here, PacifiCorp was authorized to operate the power line in question through an agreement between its predecessor-in-interest, the United States, and the State of Utah. *See* Findings of Fact 2. Again, Utah has explicitly adopted the National Electrical Safety Code as the minimum requirements for "the operation of electrical equipment and lines." And as explained, Mr. Bacon has not shown that PacifiCorp violated any provision of the National Electric Safety Code. Nor has he demonstrated that PacifiCorp's operation of the powerline was unlawful or negligent in any other respect. The court thus finds that Mr. Bacon has failed to demonstrate a public nuisance claim because PacifiCorp is authorized to operate this power line by the State and is doing so in compliance with the State's requirements. The court will grant judgment on this claim.

* * *

Based on its findings of fact and conclusions of law, the court will enter judgment in favor of PacifiCorp on all of Mr. Bacon's claims.

DATED this 16th day of August, 2022



Howard C. Nielson, Jr.
United States District Judge